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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/790,904	03/02/2004	Jason L. Mitchell	00100.02.0045	2636

29153 7590 07/12/2007

ADVANCED MICRO DEVICES, INC.

C/O VEDDER PRICE KAUFMAN & KAMMHOLZ, P.C.

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EXAMINER

PAPPAS, PETER

ART UNIT

PAPER NUMBER

2628

MAIL DATE

DELIVERY MODE

07/12/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/790,904	MITCHELL ET AL.	
	Examiner	Art Unit	
	Peter-Anthony Pappas	2628	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 June 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-16 are rejected under 35 U.S.C. 102(e) as being anticipated by Duluk, Jr. et al. (U.S. Patent No. 6, 577, 317 B1).
3. In regards to claim 1 it is noted that said claim language includes open-ended language (e.g., comprising) and therefore it is noted that said claim is not limited to only the limitations disclosed. Duluk, Jr. et al. teaches an apparatus and methods for rendering 3D-graphics images preferably includes a port for receiving commands from a graphics application, an output for sending a rendered image to a display and a geometry-operations pipeline, coupled to the port and to the output, the geometry-operations pipeline including a block for performing transformations (Abstract).

The command-fetch-and-decode block 841 handles communication with the host computer through the graphics port. It converts its input into a series of packets, which it passes to the geometry block 842 (command processor). Most of the input stream consists of geometrical data, that is to say, vertices that describe lines, points and polygons (col. 6, lines 23-28).

The geometry block 842 transforms incoming graphics primitives into a uniform coordinate space ("world space"). It then clips the primitives to the viewing volume ("frustum"). In addition to the six planes that define the viewing volume (left, right, top, bottom, front and back), the subsystem provides six user-definable clipping planes (col. 6, lines 38-43). Duluk, Jr. et al. further teaches that the trivial reject/accept test for both the user defined and the view volume clip planes are performed on each vertex (col. 13, lines 35-36). It is noted that said viewing volume illustrated in Fig. 1 is comprised of six planes which are considered to form a closed geometric representation of a specific object (e.g., the object illustrated in Fig. 1 as a view volume).

There are four types of packets output from the geometry block 842: color vertex, spatial vertex, propagated mode, and propagated vertex. Each of these packets is described in turn below (col. 17, lines 7-10). A Color Vertex packet contains the properties associated with a vertex's position. Every vertex not removed by back face culling or clipped off by volume clip planes (trivial reject or multiply planes exclude complete polygon) produces a single vertex color packet. A Spatial Vertex packet contains the spatial coordinates (indices) and relationships of a single vertex. Every input vertex packet not removed by back face culling or clipped off by volume clip planes (trivial reject or multiply planes exclude complete polygon) produces a spatial vertex packet corresponding to the exact input vertex coordinates (col. 17, lines 14-29).

It is noted said vertices not removed by back face culling or clipped off by volume clip planes are considered to be identified as visible. It is further noted that said vertex

packets contain graphic information for the rendering of said image to a display disclosed above.

4. In regards to claim 2 the rationale disclosed in the rejection of claim 1 is incorporated herein. It is noted said geometry processor 842 establishes, in part, whether a given packet is visible or not.

5. In regards to claim 3 the rationale disclosed in the rejection of claim 1 is incorporated herein (col. 17, lines 14-29).

6. In regards to claim 4 the rationale disclosed in the rejection of claim 1 is incorporated herein. As previously disclosed said Spatial Vertex packet contains the spatial coordinates and relationships of a single vertex (col. 17, lines 14-29). Thus, said spatial coordinates and relationships would not be available if a given Spatial Vertex packet, which is indicated as containing data relevant to visibility, is not output by geometry block 842.

7. In regards to claim 5 Duluk, Jr. et al. teaches that a duration counter tracks the time a vertex is in the stage 212 (col. 20, lines 37-38). Stage A 212 could require more than one pipeline cycle to process the packet, depending on the type of packet it is and the state that is set in the stage. If more than one pipeline cycle is required, the stage raises the Pipeline_Full signal. If Pipeline_Full is raised, the unit controller is not allowed to advance the next packet down the pipe. When the stage detects that the packet will complete in the current stage, the Pipeline_Full signal is cleared, and just as the unit controller advanced the command register of stage A, stage A advances the command register of stage B (col. 18, lines 43-52).

8. In regards to claim 6; specifically view frustum comparison, the rationale disclosed in the rejection of claim 1 is incorporated herein (col. 6, lines 38-43; col. 13, lines 35-36).

9. In regards to claim 7 the rationale disclosed in the rejection of claims 1-3 are incorporated herein.

10. In regards to claim 8 the rationale disclosed in the rejection of claim 4 is incorporated herein.

11. In regards to claim 9 the rationale disclosed in the rejection of claim 5 is incorporated herein.

12. In regards to claim 10 the rationale disclosed in the rejection of claim 6 is incorporated herein.

13. In regards to claim 11 the rationale disclosed in the rejection of claim 1 is incorporated herein.

14. In regards to claim 12 the rationale disclosed in the rejection of claim 2 is incorporated herein.

15. In regards to claim 13 the rationale disclosed in the rejection of claim 3 is incorporated herein.

16. In regards to claim 14 the rationale disclosed in the rejection of claim 4 is incorporated herein.

17. In regards to claim 15 the rationale disclosed in the rejection of claim 5 is incorporated herein.

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18. In regards to claim 16 the rationale disclosed in the rejection of claim 6 is incorporated herein.

Response to Arguments

19. The prior claim objections have been withdrawn in lieu of Applicant's remarks.

20. In response to Applicant's remarks that Duluk, Jr. et al. fails to show, teach or suggest comparing each of the plurality of draw packets to a drawing volume object, wherein the bounding volume object comprises a geometric representation of a specific object the Applicant is directed to the respective rejection above which has been further clarified. It is noted that the comparison of said stored vertex information to said view volume it considered to read on comparing each of the plurality of draw packets (e.g., plurality of stored vertex information) to a bounding volume object.

21. Applicant's remarks have been fully considered but are not deemed persuasive.

Conclusion

22. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter-Anthony Pappas whose telephone number is 571-272-7646. The examiner can normally be reached on M-F 9:00am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ulka Chauhan can be reached on 571-272-7782. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

PP

Peter-Anthony Pappas
Examiner
Art Unit 2628



KEE M. TUNG
SUPERVISORY PATENT EXAMINER